

SEQUENCE LISTING

<110> Bonnie L. Bassler
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<120> COMPOUNDS AND METHODS FOR REGULATING
BACTERIAL GROWTH AND PATHOGENESIS

<130> PUNIV.4DV1C1

<150> 60/254,398
<151> 2000-12-07

<150> 60/202,999
<151> 2000-05-10

<150> 60/203,000
<151> 2000-05-10

<150> 09/853,832
<151> 2001-05-10

<150> 10/300,818
<151> 2002-11-19

<160> 27

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 519
<212> DNA
<213> *Vibrio harveyi*

<400> 1
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gtggctaaaa cgatgcaaac tcaaaaagga gacaccatca cggatttcga cctacgtttc 120
actgctccaa acaaagacat cctttctgag aaaggaattc atacattaga gcatttgtac 180
gcaggcttta tgcgtaatca cctaaatggt gatagcgttg agatcattga tatctacca 240
atggggtgcc gtactgggtt ctacatgagc ttgattggtg cgccttcaga gcagcaagtg 300
gctgacgctt ggattgccgc gatggaagac gtactaaaag tagaaaacca aaacaagatc 360
cctgagttga acgaatacca atgtgttaca gcagcgatgc actctctgga tgaagcgaag 420
caaatcgcca agaacattct agaagtgggt gtggcggatga ataagaatga tgaattggca 480
ctgccagagt caatgctgag agagctacgc atcgactaa 519

<210> 2
<211> 516
<212> DNA
<213> *Escherichia coli*

<400> 2

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gtggcgaaaa caatgaacac cccgcatggc gacgcaatca cgtgttcga tctgcgttc 120
tgcgtgccga acaagaagt gatgccaga agagggatcc ataccctgga gcacctgtt 180
gctggtttta tgcgtaacca tctaacggt aatggtgtag agattatga tatctcgca 240
atgggctgcc gcaccggtt ttatatgagt ctgattgga cgccagatga gcagcgtgt 300
gctgatgctt ggaaagcggc aatggaagac gtgctgaaag tgcaggatca gaacagatc 360
ccggaactga acgtctacca gtgtggcact taccagatgc actcgttga ggaagcgag 420
gatatcgcg gtagcattct ggaacgtgac gtacgcatca acagcaacga agaactggca 480
ctgccgaaag agaagtgca ggaactgcac atctag 516

<210> 3

<211> 110

<212> DNA

<213> *Salmonella typhimurium*

<220>

<221> misc_feature

<222> (1)...(110)

<223> sequence from MudJ

<400> 3

gatgtgctga aagtgcagga tcaaaaccag atcccgagc tgaacgttta ccagtgcggt 60
acgtatcaga tgcactcgct cagtgaagcg caggacattg cccgtcatat 110

<210> 4

<211> 492

<212> DNA

<213> *Salmonella typhimurium*

<400> 4

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cgcatggcga cgcaatcacg tgttgatct gcgttttgc attccgaaca aagaagtgt 120
gccggaaaaa gggattcata cgcttgagca tctgtttgct ggctttatgc gcgaccacct 180
caacggtaac ggcgttgaga ttatcgatat ctgcgcatg ggctgccgca ccggctttta 240
catgagcctg attggcacgc cggacgagca gcgtgttgc gacgcctgga aagcggcgat 300
ggcggatgtg ctgaaagtgc aggatcaaaa ccagatcccg gagctgaacg ttaccagtg 360
cggtagctat cagatgcact cgctcagtg agcgcaggac attgccgctc atattctgga 420
gcgtgatgtg cgcgtgaaca gcaataaaga gctggcgctg ccgaaagaaa aactgcagga 480
actgatatt ag 492

<210> 5

<211> 504

<212> DNA

<213> *Haemophilus influenzae*

<400> 5

atgccattac ttgatgttt taaagtggat cacacaaaaa tgaacgcacc tgcagtacgc 60
attgcaaaaa cgaatgctac gccaaaaggc gataatatta ctgttttga ttacgtttt 120
tgtattccaa acaaaagaaat tcttcccca aaaggcattc atacactga acatttatt 180
gctggattta tgcgcatca tttaaatggc gatagcatag aaattattga tatttctccg 240
atgggatgtc gcacgggatt ttatatgtct ttgattggca caccaaatga acagaaagt 300
tctgaggctt ggtagcttc aatgcaagat gtttaggtg tacaagatca agcttctatt 360
cctgaattaa atatctatca atgcggaagc tatacggaac attccttaga agatgcacac 420

gaaattgccaaaatgttatcgacgcggtataggtgtataaaaaatgaagatttgta480
ctcgataattccttataaaatag504

<210> 6
<211> 468
<212> DNA
<213> *Helicobacter pylori*

<400> 6
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ccttatgtgcgtgtcgctga tcgcaaaaag ggcgttaatg gggatttgat tgtcaaatac 120
gatgtgcgct tcaagcagcc caaccaagat cacatggaca tgcctagcct acattcttta 180
gagcatttag tcgtgaaat tatccgcaac catgccagtt atgtcgtgga ttggtcgct 240
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ttagaggttt tagaaaagac catgcaagat gtgttaaagg ctacagaagt gcctgccagc 360
aatgaaaagc aatgcggtg ggcggctaac cacacttag aggggtgctaa ggatttagcg 420
cgcgcttttt tagacaaacg cgctgagtgg tctgaagtgg gggtttga 468

<210> 7
<211> 482
<212> DNA
<213> *Bacillus subtilis*

<400> 7
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cattgcggcg tgcataaagt gggaacagac ggcgttgtaa ataaattga cattcgtttt 120
tgccagccaa ataaacaggc gatgaagcct gacaccattc acacactcga gcatttgctc 180
gcgtttacga ttggttctca cgctgagaaa tacgatcatt ttgatatcat tgatattct 240
ccaatgggct gccagacagg ctattatcta gttgtgagcg gagagccgac atcagcggaa 300
atcgttgatc tgcttgaaga cacaatgaag gaagcggtag agattacaga aatacctgct 360
gcgaatgaaa agcagtcgag ccaagcgaag ctatcatgac tggaggcgc taaacgttta 420
atgcgttctt ggctttcaca ggataaagaa gaattgctaa aagtatttgg ctaaaataga 480
aa482

<210> 8
<211> 537
<212> DNA
<213> *Borrelia burgdorferi*

<400> 8
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gaaaaaaata acaagcttta caatagatca taaaaaactc aaccctggca tatatgtctc 120
aagaaaagat acctttgaaa atgtaatat tactacaata gacattagaa tcaaagctcc 180
caacatcgaa ccaataattg aaaacgcagc aatacatata atagagcaca taggagctac 240
tttacttaga aataatgaag ttggaccga aaaaatagta tttttggcc ctatgggatg 300
cagaactggt ttttacttaa taatttttgg agactatgaa agtaaagatc ttgtgactt 360
agtctcatgg ctttttccg aaatcgtaaa ttttcagaa cctatcccag gcgcaagtga 420
taaggaaatc ggaaattaca aagaacataa ccttgatatg gctaaatatg aatcttctaa 480
atacttaca atattaacaa atattaaga agaaaattta aaatcctt agctcat 537

<210> 9
<211> 519
<212> DNA
<213> *Vibrio cholerae*

<400> 9

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atgccattat tagacagttt taccgtcgat catactcgta tgaatgcacc ggcggtgcgt 60
gttgccaaaa ccatgcaaac cccaaaagg gatacgatta ccgtattga ttgcgtttt 120
actatgccaa acaaagatat ctgtctgag cgcggtatcc atactctaga gcctctctac 180
gcgggcttta tgcgcaatca ccttaacggc agccaagtgg agatcatcga tatttcacca 240
atgggtgcc gtacaggttt ctacatgagc ttgattggtg cgccgacaga acagcaagtg 300
gcacaagcat ggctagccgc aatgcaagat gtgtgaaag ttgaaagcca agagcaaatt 360
cctgagctga atgagtacca gtgcggcact gcggcgatgc actcgctcga agaagccaaa 420
gcgattgcga aaaacgtgat tgcggcaggc atctcggtta accgtaacga tgagtggcg 480
ctgccgaat ctatgctcaa tgagctgaag gttcactaa 519
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<210> 10

<211> 172

<212> PRT

<213> *Vibrio harveyi*

<400> 10

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Met Pro Leu Leu Asp Ser Phe Thr Val Asp His Thr Arg Met Asn Ala
 1      5      10     15
Pro Ala Val Arg Val Ala Lys Thr Met Gln Thr Pro Lys Gly Asp Thr
 20     25     30
Ile Thr Val Phe Asp Leu Arg Phe Thr Ala Pro Asn Lys Asp Ile Leu
 35     40     45
Ser Glu Lys Gly Ile His Thr Leu Glu His Leu Tyr Ala Gly Phe Met
 50     55     60
Arg Asn His Leu Asn Gly Asp Ser Val Glu Ile Ile Asp Ile Ser Pro
 65     70     75     80
Met Gly Cys Arg Thr Gly Phe Tyr Met Ser Leu Ile Gly Thr Pro Ser
 85     90     95
Glu Gln Gln Val Ala Asp Ala Trp Ile Ala Ala Met Glu Asp Val Leu
100    105    110
Lys Val Glu Asn Gln Asn Lys Ile Pro Glu Leu Asn Glu Tyr Gln Cys
115    120    125
Gly Thr Ala Ala Met His Ser Leu Asp Glu Ala Lys Gln Ile Ala Lys
130    135    140
Asn Ile Leu Glu Val Gly Val Ala Val Asn Lys Asn Asp Glu Leu Ala
145    150    155    160
Leu Pro Glu Ser Met Leu Arg Glu Leu Arg Ile Asp
165    170
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<210> 11

<211> 171

<212> PRT

<213> *Escherichia coli*

<400> 11

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Met Pro Leu Leu Asp Ser Phe Thr Val Asp His Thr Arg Met Glu Ala
 1      5      10     15
Pro Ala Val Arg Val Ala Lys Thr Met Asn Thr Pro His Gly Asp Ala
 20     25     30
Ile Thr Val Phe Asp Leu Arg Phe Cys Val Pro Asn Lys Glu Val Met
 35     40     45
Pro Glu Arg Gly Ile His Thr Leu Glu His Leu Phe Ala Gly Phe Met
 50     55     60
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Arg Asn His Leu Asn Gly Asn Gly Val Glu Ile Ile Asp Ile Ser Pro
 65 70 75 80
 Met Gly Cys Arg Thr Gly Phe Tyr Met Ser Leu Ile Gly Thr Pro Asp
 85 90 95
 Glu Gln Arg Val Ala Asp Ala Trp Lys Ala Ala Met Glu Asp Val Leu
 100 105 110
 Lys Val Gln Asp Gln Asn Gln Ile Pro Glu Leu Asn Val Tyr Gln Cys
 115 120 125
 Gly Thr Tyr Gln Met His Ser Leu Gln Glu Ala Gln Asp Ile Ala Arg
 130 135 140
 Ser Ile Leu Glu Arg Asp Val Arg Ile Asn Ser Asn Glu Glu Leu Ala
 145 150 155 160
 Leu Pro Lys Glu Lys Leu Gln Glu Leu His Ile
 165 170

<210> 12
 <211> 164
 <212> PRT
 <213> Salmonella typhimurium

<400> 12
 Asn Ser Asp His Thr Arg Met Gln Ala Pro Ala Val Arg Val Ala Lys
 1 5 10 15
 Thr Met Asn Thr Pro His Gly Asp Ala Ile Thr Val Phe Asp Leu Arg
 20 25 30
 Phe Cys Ile Pro Asn Lys Glu Val Met Pro Glu Lys Gly Ile His Thr
 35 40 45
 Leu Glu His Leu Phe Ala Gly Phe Met Arg Asp His Leu Asn Gly Asn
 50 55 60
 Gly Val Glu Ile Ile Asp Ile Ser Pro Met Gly Cys Arg Thr Gly Phe
 65 70 75 80
 Tyr Met Ser Leu Ile Gly Thr Pro Asp Glu Gln Arg Val Ala Asp Ala
 85 90 95
 Trp Lys Ala Ala Met Ala Asp Val Leu Lys Val Gln Asp Gln Asn Gln
 100 105 110
 Ile Pro Glu Leu Asn Val Tyr Gln Cys Gly Thr Tyr Gln Met His Ser
 115 120 125
 Leu Ser Glu Ala Gln Asp Ile Ala Arg His Ile Leu Glu Arg Asp Val
 130 135 140
 Arg Val Asn Ser Asn Lys Glu Leu Ala Leu Pro Lys Glu Lys Leu Gln
 145 150 155 160
 Glu Thr Asp Ile

<210> 13
 <211> 167
 <212> PRT
 <213> Haemophilus influenzae

<400> 13
 Met Pro Leu Leu Asp Ser Phe Lys Val Asp His Thr Lys Met Asn Ala
 1 5 10 15
 Pro Ala Val Arg Ile Ala Lys Thr Met Leu Thr Pro Lys Gly Asp Asn

20 25 30
 Ile Thr Val Phe Asp Leu Arg Phe Cys Ile Pro Asn Lys Glu Ile Leu
 35 40 45
 Ser Pro Lys Gly Ile His Thr Leu Glu His Leu Phe Ala Gly Phe Met
 50 55 60
 Arg Asp His Leu Asn Gly Asp Ser Ile Glu Ile Ile Asp Ile Ser Pro
 65 70 75 80
 Met Gly Cys Arg Thr Gly Phe Tyr Met Ser Leu Ile Gly Thr Pro Asn
 85 90 95
 Glu Gln Lys Val Ser Glu Ala Trp Leu Ala Ser Met Gln Asp Val Leu
 100 105 110
 Gly Val Gln Asp Gln Ala Ser Ile Pro Glu Leu Asn Ile Tyr Gln Cys
 115 120 125
 Gly Ser Tyr Thr Glu His Ser Leu Glu Asp Ala His Glu Ile Ala Lys
 130 135 140
 Asn Val Ile Ala Arg Gly Ile Gly Val Asn Lys Asn Glu Asp Leu Ser
 145 150 155 160
 Leu Asp Asn Ser Leu Leu Lys
 165

<210> 14
 <211> 155
 <212> PRT
 <213> *Helicobacter pylori*

<400> 14
 Met Lys Thr Pro Lys Met Asn Val Glu Ser Phe Asn Leu Asp His Thr
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 Lys Val Lys Ala Pro Tyr Val Arg Val Ala Asp Arg Lys Lys Gly Val
 20 25 30
 Asn Gly Asp Leu Ile Val Lys Tyr Asp Val Arg Phe Lys Gln Pro Asn
 35 40 45
 Gln Asp His Met Asp Met Pro Ser Leu His Ser Leu Glu His Leu Val
 50 55 60
 Ala Glu Ile Ile Arg Asn His Ala Ser Tyr Val Val Asp Trp Ser Pro
 65 70 75 80
 Met Gly Cys Gln Thr Gly Phe Tyr Leu Thr Val Leu Asn His Asp Asn
 85 90 95
 Tyr Thr Glu Ile Leu Glu Val Leu Glu Lys Thr Met Gln Asp Val Leu
 100 105 110
 Lys Ala Thr Glu Val Pro Ala Ser Asn Glu Lys Gln Cys Gly Trp Ala
 115 120 125
 Ala Asn His Thr Leu Glu Gly Ala Lys Asp Leu Ala Arg Ala Phe Leu
 130 135 140
 Asp Lys Arg Ala Glu Trp Ser Glu Val Gly Val
 145 150 155

<210> 15
 <211> 157
 <212> PRT
 <213> *Bacillus subtilis*

<400> 15

Met Pro Ser Val Glu Ser Phe Glu Leu Asp His Asn Ala Val Val Ala
 1 5 10 15
 Pro Tyr Val Arg His Cys Gly Val His Lys Val Gly Thr Asp Gly Val
 20 25 30
 Val Asn Lys Phe Asp Ile Arg Phe Cys Gln Pro Asn Lys Gln Ala Met
 35 40 45
 Lys Pro Asp Thr Ile His Thr Leu Glu His Leu Leu Ala Phe Thr Ile
 50 55 60
 Arg Ser His Ala Glu Lys Tyr Asp His Phe Asp Ile Ile Asp Ile Ser
 65 70 75 80
 Pro Met Gly Cys Gln Thr Gly Tyr Tyr Leu Val Val Ser Gly Glu Pro
 85 90 95
 Thr Ser Ala Glu Ile Val Asp Leu Leu Glu Asp Thr Met Lys Glu Ala
 100 105 110
 Val Glu Ile Thr Glu Ile Pro Ala Ala Asn Glu Lys Gln Cys Gly Gln
 115 120 125
 Ala Lys Leu His Asp Leu Glu Gly Ala Lys Arg Leu Met Arg Phe Trp
 130 135 140
 Leu Ser Gln Asp Lys Glu Glu Leu Leu Lys Val Phe Gly
 145 150 155

<210> 16
 <211> 173
 <212> PRT
 <213> Borrelia burgdorferi

<400> 16
 Met Gly Lys Ile Arg Phe Cys Lys Lys Asn Thr Asn Ser Ala Lys Lys
 1 5 10 15
 Met Lys Lys Ile Thr Ser Phe Thr Ile Asp His Thr Lys Leu Asn Pro
 20 25 30
 Gly Ile Tyr Val Ser Arg Lys Asp Thr Phe Glu Asn Val Ile Phe Thr
 35 40 45
 Thr Ile Asp Ile Arg Ile Lys Ala Pro Asn Ile Glu Pro Ile Ile Glu
 50 55 60
 Asn Ala Ala Ile His Thr Ile Glu His Ile Gly Ala Thr Leu Leu Arg
 65 70 75 80
 Asn Asn Glu Val Trp Thr Glu Lys Ile Val Tyr Phe Gly Pro Met Gly
 85 90 95
 Cys Arg Thr Gly Phe Tyr Leu Ile Ile Phe Gly Asp Tyr Glu Ser Lys
 100 105 110
 Asp Leu Val Asp Leu Val Ser Trp Leu Phe Ser Glu Ile Val Asn Phe
 115 120 125
 Ser Glu Pro Ile Pro Gly Ala Ser Asp Lys Glu Cys Gly Asn Tyr Lys
 130 135 140
 Glu His Asn Leu Asp Met Ala Lys Tyr Glu Ser Ser Lys Tyr Leu Gln
 145 150 155 160
 Ile Leu Asn Asn Ile Lys Glu Glu Asn Leu Lys Tyr Pro
 165 170

<210> 17
 <211> 172
 <212> PRT

<213> *Vibrio cholerae*

<400> 17

Met Pro Leu Leu Asp Ser Phe Thr Val Asp His Thr Arg Met Asn Ala
1 5 10 15
Pro Ala Val Arg Val Ala Lys Thr Met Gln Thr Pro Lys Gly Asp Thr
20 25 30
Ile Thr Val Phe Asp Leu Arg Phe Thr Met Pro Asn Lys Asp Ile Leu
35 40 45
Ser Glu Arg Gly Ile His Thr Leu Glu His Leu Tyr Ala Gly Phe Met
50 55 60
Arg Asn His Leu Asn Gly Ser Gln Val Glu Ile Ile Asp Ile Ser Pro
65 70 75 80
Met Gly Cys Arg Thr Gly Phe Tyr Met Ser Leu Ile Gly Ala Pro Thr
85 90 95
Glu Gln Gln Val Ala Gln Ala Trp Leu Ala Ala Met Gln Asp Val Leu
100 105 110
Lys Val Glu Ser Gln Glu Gln Ile Pro Glu Leu Asn Glu Tyr Gln Cys
115 120 125
Gly Thr Ala Ala Met His Ser Leu Glu Glu Ala Lys Ala Ile Ala Lys
130 135 140
Asn Val Ile Ala Ala Gly Ile Ser Val Asn Arg Asn Asp Glu Leu Ala
145 150 155 160
Leu Pro Glu Ser Met Leu Asn Glu Leu Lys Val His
165 170

<210> 18

<211> 32

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide primer for fts Q1P promoter

<400> 18

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<210> 19

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide primer for fts Q2P promoter

<400> 19

cgcgatcct cttctcgct gtttcgctg 30

<210> 20

<211> 36

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide primer

<221> misc_feature

<222> (1)...(36)

<223> n = A,T,C or G

<400> 20

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36

<210> 21

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> MudJ specific oligonucleotide primer

<400> 21

gcactacagg ctgcaagcc c

21

<210> 22

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> arbitrary oligonucleotide primer

<400> 22

ggccacgcgt cgactagtca

20

<210> 23

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> MudJ specific oligonucleotide primer

<400> 23

tctaattcca tcagatcccg

20

<210> 24

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide primer

<400> 24

gtgaagcttg ttactgact agatc

25

<210> 25

<211> 25

<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide primer

<400> 25
gtgtctagaa aaacacgcct gacag 25

<210> 26
<211> 171
<212> PRT
<213> Escherichia coli

<400> 26
Met Pro Leu Leu Asp Ser Phe Thr Val Asp His Thr Arg Met Glu Ala
1 5 10 15
Pro Ala Val Arg Val Ala Lys Thr Met Asn Thr Pro His Gly Asp Ala
20 25 30
Ile Thr Val Phe Asp Leu Arg Phe Cys Val Pro Asn Lys Glu Val Met
35 40 45
Pro Glu Arg Gly Ile His Thr Leu Glu His Leu Phe Ala Gly Phe Met
50 55 60
Arg Asn His Leu Asn Gly Asn Gly Val Glu Ile Ile Asp Ile Ser Pro
65 70 75 80
Met Gly Cys Arg Thr Gly Phe Tyr Met Ser Leu Ile Gly Thr Pro Asp
85 90 95
Glu Gln Arg Val Ala Asp Ala Trp Lys Ala Ala Met Glu Asp Val Leu
100 105 110
Lys Val Gln Asp Gln Asn Gln Ile Pro Glu Leu Asn Val Tyr Gln Cys
115 120 125
Gly Thr Tyr Gln Met His Ser Leu Gln Glu Ala Gln Asp Ile Ala Arg
130 135 140
Ser Ile Leu Glu Arg Asp Val Arg Ile Asn Ser Asn Glu Glu Leu Ala
145 150 155 160
Leu Pro Lys Glu Lys Leu Gln Glu Leu His Ile
165 170

<210> 27
<211> 111
<212> PRT
<213> Escherichia coli

<400> 27
Met Pro Leu Leu Asp Ser Phe Thr Val Asp His Thr Arg Met Glu Ala
1 5 10 15
Pro Ala Val Arg Val Ala Lys Thr Met Asn Thr Pro His Gly Asp Ala
20 25 30
Ile Thr Val Phe Asp Leu Arg Phe Cys Val Pro Asn Lys Glu Val Met
35 40 45
Pro Glu Arg Gly Ile His Thr Leu Glu His Leu Phe Ala Gly Phe Met
50 55 60
Arg Asn His Leu Asn Gly Asn Gly Val Glu Ile Ile Asp Ile Ser Pro
65 70 75 80

Met Gly Cys Arg Thr Gly Phe Tyr Met Ser Leu Leu Val Arg Gln Met
85 90 95
Ser Ser Val Leu Leu Met Pro Gly Lys Arg Gln Trp Lys Thr Cys
100 105 110